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Volker Laux

Board Independence and CEO Turnover

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Abstract

It is widely believed that the ideal board in corporations is composed almost entirely of independent (outside) directors. In contrast, this paper shows that some lack of board independence can be in the interest of shareholders. This follows because a lack of board independence serves as a substitute for commitment. Boards that are dependent on the incumbent CEO adopt a less aggressive CEO replacement rule than independent boards. While this behavior is inefficient ex post, it has positive ex ante incentive effects. The model suggests that independent boards (dependent boards) are most valuable to shareholders if the problem of providing appropriate incentives to the CEO is weak (severe).

Keywords: Corporate Governance; Board Independence; Severance Pay; CEO Turnover; Incentive Compensation

1 Introduction

The extent to which greater board independence benefits shareholders is the subject of much debate. There is a widespread belief that boards controlled by independent outside directors do a better job of monitoring the CEO than boards controlled by inside directors. For this reason, boards of directors are typically viewed as most valuable to shareholders when they are fully independent from the CEO. In line of this view, new corporate governance rules adopted by the NYSE and NASDAQ require that "a majority of the board of directors must be comprised of independent directors..."[1] Institutional investors, the Business Roundtable, and many others put forward similar proposals.[2]

This paper shows that pushing for majority independent boards does not necessarily lead to an improved corporate governance structure. Rather, I find that the optimal degree of board independence is a decreasing function of the severity of the agency conflict inherent in governing the organization.

To sketch the idea, consider a firm where the board of directors is responsible for motivating the CEO to exert high effort and replacing him if necessary. To make a good decision on CEO replacement, the board requires additional information regarding the prospects of the current corporate strategy. This information, however, is private to the CEO. The CEO will only reveal unfavorable information that leads to his own dismissal when the board provides generous severance pay. Severance pay

[1] The NASDAQ interpretation of an independent director is "...a person other than an officer or employee of the company or its subsidiaries or any other individual having a relationship, which, in the opinion of the company's board of directors, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director."

[2] See Baghat and Black (2001) for references and further examples.

insulates the CEO from the cost of being fired and therefore helps in eliciting bad news. But since severance pay is costly, the board seeks to reduce the expected cost of inducing truthful reporting. Intuitively, this can be achieved by committing to use the revealed information less aggressively against the CEO. However, providing severance pay is not only directly costly but also indirectly costly in that it undermines management incentives to exert effort. When the CEO realizes that he can cash in a golden handshake after performing poorly, he has much less incentive to do a good job in the first place. The ex ante efficient CEO replacement rule therefore trades off the benefits of a good decision on CEO replacement with the cost of inducing truthful reporting and motivating high effort.

I model a lack of board independence by assuming that directors reap a private benefit if the incumbent CEO retains control. This retention benefit may arise because directors' careers are linked to the CEO's, firing the CEO sheds unfavorable light on other (managing) directors, directors and the CEO have strong personal ties, or the board simply enjoys socializing with the incumbent (see Mace 1971). The level of the retention benefit is a measure for the board's degree of independence.[3] The larger this benefit, the less independent is the board from the CEO and the less likely it is that the incumbent CEO is fired. This is consistent with the standard view that less independent boards are less effective on certain tasks, such as replacing the CEO.

In a world with full commitment, shareholders are best served by boards that are fully independent from the CEO (i.e., boards that have no preference for keeping the incumbent). In this case, the independent board designs a contract that implements a relatively "soft" (i.e., non-aggressive) CEO replacement policy. However, when the

[3]For alternative ways to model board independence see, e.g., Hermalin and Weisbach (1998), Hermalin (2004), and Kumar and Sivaramakrishnan (2004).

board is unable to commit not to engage in mutually beneficial renegotiation, a fully independent board is no longer desirable. When it comes to the CEO replacement decision, a fully independent board finds it ex post beneficial to become more active. Renegotiation therefore may result in the board offering the CEO a larger amount of severance pay, intended to induce the CEO to step down. This kind of renegotiation is indeed observed in corporations: Bebchuk and Fried (2004) give cases where departing CEOs obtained gratuitous goodbye payments in addition to the contractually mandated severance payments. Renegotiation is an issue because it leads to CEO replacements that are efficient from an ex post perspective but inefficient from an ex ante point of view. For this reason, putting directors in charge that lack some independence from the CEO can increase ex ante shareholder value. A board that is dependent on the CEO adopts a CEO replacement rule which is less aggressive and closer to the shareholders' ex ante efficient rule. Put differently, a lack of board independence is a means of alleviating the commitment problem induced by renegotiation.[4] Contrary to standard arguments, the model suggests that independent boards (dependent boards) are most valuable if the incentive problem of motivating high effort is weak (severe).

The two papers most similar in spirit to this work are Aghion and Tirole (1997) and Levitt and Snyder (1997). Both papers show that limiting the principal's degree of intervention can foster management incentives. The paper is also related to the growing literature on boards.[5] Almazan and Suarez (2003) discuss the impact of CEO

[4] Arya, Glover, and Routledge (2002) and Arya and Glover (2003) make a related point. They show that delegating authority to an agent who has different preferences than the principal can be value enhancing as it mitigates commitment issues.

[5] For an overview of this literature see Hermalin and Weisbach (2003).

turnover on incentive contracting and show that some degree of CEO entrenchment can improve corporate governance. My paper differs from theirs in that it focuses on the role of board independence in corporate governance. Hermalin and Weisbach (1998) consider a dynamic relationship between the CEO and the board. Board composition (i.e., board independence) is the result of a bargaining process between the CEO and directors. In contrast, I analyze the optimal degree of board independence from shareholders' perspective and show that some lack of independence can increase shareholder value.

The paper proceeds as follows. Section 2 outlines the model. Section 3 analyzes a benchmark situation where the CEO has commitment power. Section 4 presents the main results and Section 5 provides some empirical implications. Section 6 concludes.

2 Model

Consider a game with three risk-neutral players: shareholders, a board of directors and a CEO. The board of directors hires a CEO to implement a risky project. The CEO undertakes a productive action, denoted $a \in \{a_L, a_H\}$. The private cost associated with action a is $v(a)$, where $v(a_H) > v(a_L)$. For simplicity, let $v(a_H) = v$ and $v(a_L) = 0$. It is commonly known that project profitability, denoted θ, follows a distribution function $F(\theta|a)$ with positive density $f(\theta|a)$ over the interval $[0, 1]$. More effort shifts the probability distribution to the right in the sense of first order stochastic dominance, $F(\theta|a_L) - F(\theta|a_H) > 0$ for all $\theta \in [0, 1]$. In order to avoid a trivial solution, assume shareholders always wish to induce the CEO to work hard ($a = a_H$). The profitability θ denotes the probability that the project succeeds. In case of a success, the project generates net revenues of $x_H > 0$. In case of a failure, which occurs

with probability $(1-\theta)$, the project generates net revenues of $x_L < 0$. There exists a critical cutoff level, θ^z, with the properties $\theta^z \in (0,1)$ and $\theta^z x_H + (1-\theta^z)x_L = 0$. Thus, the project has a positive net present value (NPV) if $\theta > \theta^z$ and a negative NPV if $\theta < \theta^z$. The realized outcome of the project is verifiable.

After the CEO has selected his action, he privately uncovers the project profitability θ. This information is valuable because the firm can exercise an option to terminate the risky project and to pursue a safe strategy instead. The net revenue of the safe strategy is normalized to zero. Given the threshold level under which the risky project is terminated, denoted $\widehat{\theta}$, the expected NPV is given by $E[NPV(\widehat{\theta})] = \int_{\widehat{\theta}}^{1} (\theta x_H + (1-\theta)x_L)\, f(\theta) d\theta$. Assume that $E[NPV(\widehat{\theta})]$ is concave in $\widehat{\theta}$.

The board of directors is responsible for contracting with the CEO and replacing him if necessary. If bad news is revealed (low θ), an active board replaces management and simultaneously terminates the risky project and goes for the safe strategy.[6] Let $r \in \{0,1\}$ be an indicator variable that denotes whether the CEO is fired. If $r = 1$, the incumbent CEO is removed and corporate strategy is changed and if $r = 0$, he is retained and the risky project is run to completion. Consider a message contingent revelation mechanism, where the CEO is asked to send a report $\widetilde{\theta}$. The contract $(r(\widetilde{\theta}), s(\widetilde{\theta}), w_H(\widetilde{\theta}), w_L(\widetilde{\theta}))$ specifies the replacement decision $r(\widetilde{\theta})$, the amount of severance pay $s(\widetilde{\theta})$ granted to the CEO if he is fired, and the wages $w_H(\widetilde{\theta})$ and

[6] What matters here is the abandonment of the project (given bad news) and not the removal of the CEO. However, there are many potential (but unmodeled) reasons for a CEO turnover: for example, poor performance (low θ) may update believes about the ability of the incumbent, a different business strategy may call for a different type of CEO, or the incumbent CEO may be reluctant to support the new firm strategy. There is empirical evidence by Weisbach (1995) that changes in corporate strategy are often accompanied by CEO turnovers.

$w_L(\widetilde{\theta})$ paid to the CEO if he is retained and the risky project turns out to be a success, $x = x_H$, or a failure, $x = x_L$, respectively. The reservation utility of the CEO is normalized to zero. The CEO has no private wealth which implies that payments to the CEO must be nonnegative. Since all parties are risk neutral, it is optimal to set the pay w_L as low as possible, i.e., $w_L = 0$. Note that $s(\theta_1) = s(\theta_2)$ must hold for all θ_1, θ_2 for which $r(\theta_1) = r(\theta_2) = 1$. Otherwise the CEO sends the report that results in the highest amount of severance pay. Equivalently, since $w_L = 0$, $w_H(\theta_1) = w_H(\theta_2)$ must hold for all θ_1, θ_2 for which $r(\theta_1) = r(\theta_2) = 0$. In addition, it can be shown that there exists a unique threshold $\widehat{\theta}$, such that $r(\widetilde{\theta}) = 1$ for all $\widetilde{\theta} \leq \widehat{\theta}$ and $r(\widetilde{\theta}) = 0$ for all $\widetilde{\theta} > \widehat{\theta}$.[7] Thus, the contract above can be characterized by the triplet $(\widehat{\theta}, s, w_H)$, where $\widehat{\theta}$ is the threshold under which the CEO is fired.

Except for Section 3 (which considers a benchmark solution), I assume the board cannot commit not to renegotiate the terms of the initial contract. After sending the report $\widetilde{\theta}$, the board may offer the CEO to replace the existing contract with a new one. Renegotiation takes place by common agreement and does not stand for a unilateral breach of contract. As will be seen later, renegotiation results in the board offering the CEO greater severance pay intended to convince him to step down.

Following Hermalin and Weisbach (1998), I assume that the preferences of the individual directors can be aggregated to one (collective) utility function for the board. The board of directors may have a preference for keeping the incumbent CEO. In particular, I assume that the board obtains a private benefit, denoted $\delta \geq 0$, if the incumbent is retained. Apart from this benefit, directors have similar preferences than shareholders. The factor δ can be interpreted as a measure of board independence: the greater δ, the less independent is the board from the CEO. Given the standard

[7] See Levitt and Snyder (1997).

view that outside directors are more independent, δ is expected to increase with the proportion of inside directors on the board. The degree of board independence, δ, is observable to all parties.

The model has the following timing:

Stage 1: In the beginning, the board offers the CEO a contract. The CEO decides whether to participate in the relationship and, if so, which action to take.

Stage 2: The CEO privately uncovers the profitability of the project, θ, and makes a report $\widetilde{\theta}$.

Stage 3: The board of directors may engage in mutually beneficial renegotiations. Depending on the terms of the (new) arrangement, the incumbent either stays or leaves the firm.

Stage 4: Cash flows are realized and the incumbent CEO (if in control) is paid contingent on the contract.

3 Benchmark: The Commitment Case

As a starting point, consider the case where the board is able to commit not to renegotiate the contract. From the revelation principle it is known that it is sufficient to consider only mechanisms where the CEO reports truthfully. The board solves the following problem (recall that $w_L = 0$)

$$\max_{\widehat{\theta},s,w_H} \int_{\widehat{\theta}}^{1} \left(\theta(x_H - w_H) + (1-\theta)x_L\right) f(\theta|a_H)d\theta - F(\widehat{\theta}|a_H)s + \int_{\widehat{\theta}}^{1} \delta f(\theta|a_H)d\theta \quad (1)$$

subject to

$$s = \widehat{\theta} w_H, \quad (2)$$

$$\int_{\widehat{\theta}}^{1} \theta w_H f(\theta|a_H)d\theta + F(\widehat{\theta}|a_H)s - v \tag{3}$$
$$\geq \int_{\widehat{\theta}}^{1} \theta w_H f(\theta|a_L)d\theta + F(\widehat{\theta}|a_L)s,$$

$$w_H, s \geq 0. \tag{4}$$

Constraint (2) ensures that the CEO reports the true project profitability: if $\theta \leq \widehat{\theta}$, the CEO prefers to be fired and obtain severance pay s (hence he reports $\widetilde{\theta} \leq \widehat{\theta}$) and if $\theta > \widehat{\theta}$, the CEO prefers to be retained (hence he reports $\widetilde{\theta} > \widehat{\theta}$). The incentive constraint (3) guarantees that the CEO chooses a_H instead of a_L. The nonnegativity constraint (4) requires payments to be nonnegative. The CEO's participation constraint is slack and hence is omitted.

In the optimum, (3) is binding. Substituting (2) into (3) and rearranging yields

$$w_H = \frac{v}{B(\widehat{\theta})}, \tag{5}$$

with $B(\widehat{\theta}) \equiv \int_{\widehat{\theta}}^{1} \theta f(\theta|a_H)d\theta + F(\widehat{\theta}|a_H)\widehat{\theta} - \int_{\widehat{\theta}}^{1} \theta f(\theta|a_L)d\theta - F(\widehat{\theta}|a_L)\widehat{\theta}$.

In Appendix A, I show that the board's optimal ex ante threshold level, denoted $\widehat{\theta}^A$ (A for ex ante), satisfies

$$-\left(\widehat{\theta}x_H + (1-\widehat{\theta})x_L\right) f(\widehat{\theta}|a_H) - F(\widehat{\theta}|a_H)\frac{v}{B(\widehat{\theta})} \tag{6}$$
$$-v\frac{\int_{\widehat{\theta}}^{1} \theta f(\theta|a_H)d\theta + F(\widehat{\theta}|a_H)\widehat{\theta}}{B(\widehat{\theta})^2}\left(F(\widehat{\theta}|a_L) - F(\widehat{\theta}|a_H)\right) - \delta f(\widehat{\theta}|a_H)$$
$$= 0.$$

The board's optimal contract under commitment is therefore given by $\widehat{\theta} = \widehat{\theta}^A$, $s = \widehat{\theta}w_H$, $w_H = \frac{v}{B(\widehat{\theta})}$, $w_L = 0$.

Severance pay plays a crucial role in eliciting a truthful report. The CEO will only reveal information that leads to his own dismissal when he is reimbursed via severance pay.[8] However, since severance pay is costly, the board seeks to reduce the expected cost of inducing truthful reporting. Intuitively, this can be achieved by committing to CEO replacement rules which are less aggressive.

Providing severance pay is costly not only directly but indirectly because it undermines management incentives to exert high effort. When the CEO knows that he can cash in a generous severance pay after performing poorly, he has much less incentive to work hard on the project in the first place. Thus, in order to maintain the right incentives, the reward w_H must increase if the severance pay s increases. Since the level of severance pay depends on the CEO replacement rule, motivating high effort is less costly (w_H is lower) if the board is less active in replacing the CEO.

In determining the ex ante efficient CEO replacement rule (the optimal $\widehat{\theta}$), the board of directors takes into account both the cost of inducing truth-telling and the cost of motivating high effort (as expressed in the second and the third term of (6)). The board also considers its preferences for keeping the incumbent (as expressed in the last term of (6)) and the benefits of a change of strategy associated with CEO turnover (as expressed in the first term of (6)).

Shareholders' ex ante efficient threshold level is given by (6) where $\delta = 0$. When the board is fully independent ($\delta = 0$), directors and shareholders have similar preferences. In this case, the board maximizes ex ante shareholder value which leads to Lemma 1.

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[8] The role severance pay plays in this model is related to the view expressed by Lambert and Larcker (1985) and Jensen (1988). These papers argue in a takeover context that severance payments (golden parachutes) reduce executives' inclination to hamper takeovers that might jeopardize their jobs but are valuable to shareholders.

Lemma 1 *In the commitment case, shareholders are best served by boards that are fully independent from the CEO* ($\delta = 0$).

4 No Commitment

4.1 Outcome with Renegotiation

In the rest of the paper I assume that the board is unable to commit not to engage in mutually beneficial renegotiation. The board's ex post efficient replacement strategy (i.e., the strategy which is optimal in state 3) is characterized by

$$-\left(\widehat{\theta}x_H + (1-\widehat{\theta})x_L\right) f(\widehat{\theta}|a_H) - \delta f(\widehat{\theta}|a_H) = 0. \tag{7}$$

Let $\widehat{\theta}^P$ (P for ex post) denote the threshold that satisfies (7). The ex post efficient CEO replacement strategy is more aggressive than the ex ante efficient one, i.e., $\widehat{\theta}^P > \widehat{\theta}^A$. This arises because in stage 3 the board no longer cares about the cost of inducing truth-telling and the cost of motivating high effort.

The board's ex ante efficient contract is not robust to renegotiations. To see this suppose the CEO reports profitability $\widetilde{\theta} \in \left[\widehat{\theta}^A,\ \widehat{\theta}^P\right]$. Given the initial contract, the incumbent CEO is not subject to replacement. But since retaining the CEO is ex post inefficient, the board induces the CEO to step down by offering a more generous severance pay $s = \widetilde{\theta} w_H$. The CEO is no worse off with this offer and agrees to leave. Of course, in the end the CEO sees through the board's incentives to renegotiate and reports $\widetilde{\theta} = \widehat{\theta}^P$ for all $\theta \leq \widehat{\theta}^P$. Note that renegotiation will not take place with respect to the payments w_H and w_L. Intuitively, w_H and w_L are merely transfer payments that do not affect the size of the pie. It is therefore impossible to alter these payments

without making one party strictly worse off.[9]

Without loss of generality I restrict attention to renegotiation proof contracts. The optimal separating contract is given by $\widehat{\theta} = \widehat{\theta}^P$, $s = \widehat{\theta} w_H$, $w_H = \frac{v}{B(\widehat{\theta})}$ and $w_L = 0$. This contract implements the board's ex post efficient CEO replacement rule and is therefore renegotiation-proof.

Proposition 1 *Suppose the degree of board independence, δ, is exogenous. As the board becomes more independent,*

(i) the CEO replacement rule becomes more aggressive ($\widehat{\theta}^P$ decreases with δ),

(ii) the CEO obtains a larger severance pay (s decreases with δ)

(iii) the CEO obtains a larger reward for success (w_H decreases with δ).

Result (i) of Proposition 1 arises because a board that is dependent on the CEO has an interest in keeping him. The greater the lack of independence, the less likely it is that the incumbent CEO is fired. This is consistent with the standard view that less independent boards are less effective on certain tasks, such as replacing the CEO. Results (ii) and (iii) of Proposition 1 follow because a more aggressive decision on CEO replacement is associated with a larger severance pay s and a larger reward w_H as discussed in Section 3.

A corollary to Proposition 1 is:

Corollary 1 *As the board of directors becomes more independent, the CEO can extract larger rents from the firm.*

[9] This result holds since both parties are risk neutral. In the case of managerial risk aversion, alterations of the payments w_H and w_L can lead to improved risk sharing and therefore to increased ex post efficiency (see Fudenberg and Tirole 1990).

The CEO is better off with a board of directors that is more independent. This is a surprising result since it is widely believed that CEOs are better able to extract rents when boards lack independence (Bebchuk and Fried 2003, 2004). The result in the corollary arises because the CEO has private information, which the board wishes to elicit. When the board is more independent and, hence, more active in replacing the CEO, the incumbent is less willing to reveal bad news. This increases the amount of severance pay required to elicit a truthful report and, in turn, the required reward w_H.

4.2 The Optimal Level of Board Independence

In this section, I analyze the optimal degree of board independence δ from shareholders' perspective. Since the board is unable to commit not to engage in renegotiations, the board will adopt the CEO replacement rule that is ex post efficient (from the board's point of view). If the board is fully independent from the CEO (and therefore has similar preferences than shareholders), the CEO is fired whenever the project has a negative NPV (i.e., $\widehat{\theta} = \theta^z$). This outcome is undesirable from an ex ante perspective because it is associated with excessive incentive costs. If, however, the board lacks some independence from the CEO, the board's ex post efficient firing decision is less aggressive and closer to the shareholders' ex ante efficient one. The optimal degree of board independence is such that the board's ex post efficient CEO replacement rule corresponds to the shareholders' ex ante efficient rule. This is the case for

$$\delta = v\frac{\int_{\widehat{\theta}}^{1}\theta f(\theta|a_H)d\theta + F(\widehat{\theta}|a_H)\widehat{\theta}}{f(\widehat{\theta}|a_H)}\frac{F(\widehat{\theta}|a_L) - F(\widehat{\theta}|a_H)}{B(\widehat{\theta})^2} + \frac{F(\widehat{\theta}|a_H)}{f(\widehat{\theta}|a_H)}\frac{v}{B(\widehat{\theta})}. \qquad (8)$$

Putting directors in charge who have preferences for keeping the incumbent CEO (and therefore have different preferences than shareholders), leads to a CEO replace-

ment rule that maximizes ex ante shareholder value.

Proposition 2 *The lack of board independence serves as a substitute for commitment. The optimal degree of board independence is a function of the severity of the incentive problem as measured by v.*

The board composition that is commonly perceived as the ideal one, namely that the board is comprised entirely of independent directors ($\delta = 0$), is optimal only if there is no underlying incentive problem between shareholders and the CEO ($v = 0$). In all other cases, some lack of board independence is desirable.

The proof of the next proposition is provided in Appendix B.

Proposition 3 *Suppose that the degree of board independence, δ, is chosen optimally. As the severity of the incentive problem increases,*

(i) CEO replacement becomes less aggressive ($\widehat{\theta}$ decreases with v),

(ii) the optimal degree of board independence decreases (δ increases with v),

(iii) the CEO obtains a larger reward for success (w_H increases with v).

Result (i) of Proposition 3 follows because if the incentive problem becomes stronger, the ex ante incentive contracting benefit associated with a softer policy on CEO replacement increases. Result (ii) of Proposition 3 arises because in order to ensure less aggressive decisions on CEO replacement, a board is required that is more dependent on the CEO; that is, result (ii) follows from result (i). Consequently, and in contrast to what has frequently been argued, independent directors are most valuable to shareholders if the incentive problem inherent in governing the organization is weak. Finally, result (iii) follows because if v increases, additional performance pay must be granted to the CEO to maintain the right incentives.

5 Discussion

Over the last three decades there has been a trend toward greater board independence in the U.S. and other countries (see Bhagat and Black 2001 and Hermalin 2004 for discussions). The large shift in board composition over time seems unlikely to be an endogenous (optimal) response to changes in firm characteristics. Rather it is likely driven by conventional wisdom, regulatory and other external pressures (Bhagat and Black 2001). If this is the case, the current model provides the following implications which follow directly from Proposition 1.

Implication 1 *As board independence increases, (i) CEOs are more often fired, (ii) severance pay increases and (iii) performance based pay increases.*

Part (i) of Implication 1 is consistent with the evidence in Huson, Parrino, and Starks (2001) and Weisbach (1988). Huson et al. (2001) find that the fraction of CEO dismissals has been risen over the period in which board independence increased (they use data from the period 1971 to 1994). Using the proportion of outside directors as a measure for board independence, Weisbach (1988) finds that CEO dismissal is more sensitive to poor performance when boards are more independent. This observation is typically viewed as some evidence that independent boards do a better job of monitoring the CEO and therefore improve corporate governance. However, this argument does not account for the potential adverse effects board activism has on management incentives.

Part (ii) of Implication 1 matches the evidence in Lefanowicz, Robinson, and Smith (2000) and Yermack (2004). Lefanowicz et al. (2000) find that firms increased the use and scope of golden parachutes over the period 1980 to 1995. Yermack (2004) observes that CEOs obtain larger severance payments if the proportion of outsiders

on the board is greater.

Support for part (iii) of Implication 1 is provided by several studies including Hall and Liebman (1998). They find that executive compensation increased substantially during the period 1980 to 1994. The implication also matches the evidence by Core, Holthausen and Larcker (1999). Using a sample of 205 U.S. firms, they find that CEO compensation increases with the proportion of outside directors on the board.[10]

There is no clear answer to the question what is driving the trend toward greater board independence. As just mentioned, changes in board composition could be the result of regulatory and other pressures. However, the current model shows that the trend toward greater board independence can also be the result of CEOs gaining more influence over the board selection process. As discussed in Section 4, CEOs prefer more independent boards because these boards tend to be more aggressive on CEO removal which translates into larger severance pay and performance compensation.

6 Conclusion

This paper shows that the current push for highly independent boards in organizations does not necessarily lead to an improved corporate governance structure. Boards that are dependent on the incumbent CEO remove poorly performing CEOs less often than boards that are independent. Since this behavior is inefficient ex post, it is often viewed as some evidence that dependent boards are ineffective monitors. However,

[10]Hermalin (2004) makes a similar prediction but for a different reason. He assumes that more independent directors are more diligent in monitoring the CEO's talent. When the board is more inclined to monitor, the CEO will exert more effort in an attempt to distort a signal about his talent. Hermalin argues that the utility loss of the increased effort must be compensated via increased pay. Hence, greater board independence is associated with larger executive compensation.

softer policies on CEO replacement have beneficial ex ante incentive effects. Due to these incentive effects, independent boards (dependent boards) are most valuable when the agency problem inherent in governing the organization is weak (strong).

Throughout the paper, I assume that the board is unable to commit not to engage in mutually beneficial renegotiations. This lack of commitment is the reason why dependent directors can be valuable to shareholders. However, one might argue that shareholders cannot commit not to replace directors either. Ex post (i.e., in stage 3) shareholders have an interest to replace a board that lacks independence with a board that is fully independent since a dependent board is only desirable ex ante. However, there are mechanisms that can prevent shareholders from replacing the board of directors at short notice. One prominent example is staggered boards. Staggered boards insulate a majority of the board of directors from being replaced before the passage of two annual elections. Although staggered boards are typically seen to be against shareholders' interests (Bebchuk, Cohen 2004; Bebchuk, Cohen, and Ferrell 2004), such an arrangement can actually be useful in alleviating commitment concerns.

Appendix

Appendix A. Substituting (2) into (1) and letting λ be the multiplier on (5), the Lagrangian formulation of the problem is

$$\max_{\widehat{\theta},w_H} \int_{\widehat{\theta}}^{1} \left(\theta(x_H - w_H) + (1-\theta)x_L\right) f(\theta|a_H)d\theta - F(\widehat{\theta}|a_H)\widehat{\theta}w_H + \left(1 - F(\widehat{\theta}|a_H)\right)\delta$$
$$+\lambda\left(w_H B(\widehat{\theta}) - v\right).$$

The first order conditions on $\widehat{\theta}$ and w_H are

$$\begin{aligned} & -\left(\widehat{\theta}(x_H - w_H) + (1-\widehat{\theta})x_L\right) f(\widehat{\theta}|a_H) - f(\widehat{\theta}|a_H)\widehat{\theta}w_H - F(\widehat{\theta}|a_H)w_H \qquad (9) \\ & -\delta f(\widehat{\theta}|a_H) - \lambda w_H\left(F(\widehat{\theta}|a_L) - F(\widehat{\theta}|a_H)\right) \\ = \; & 0, \end{aligned}$$

$$-\int_{\widehat{\theta}}^{1} \theta f(\theta|a_H)d\theta - F(\widehat{\theta}|a_H)\widehat{\theta} + \lambda B(\widehat{\theta}) = 0. \qquad (10)$$

Rearranging (10) yields

$$\lambda = \frac{\int_{\widehat{\theta}}^{1} \theta f(\theta|a_H)d\theta + F(\widehat{\theta}|a_H)\widehat{\theta}}{B(\widehat{\theta})}. \qquad (11)$$

Substituting (11) into (9) gives (6).

Appendix B.

Let $R(\widehat{\theta}) \equiv \left(\int_{\widehat{\theta}}^{1} \theta f(\theta|a_H)d\theta + F(\widehat{\theta}|a_H)\widehat{\theta}\right)\frac{F(\widehat{\theta}|a_L)-F(\widehat{\theta}|a_H)}{B(\widehat{\theta})^2}$.

Note that $R'(\widehat{\theta}) = F(\widehat{\theta}|a_H)\frac{F(\widehat{\theta}|a_L)-F(\widehat{\theta}|a_H)}{B(\widehat{\theta})^2} + \left(\int_{\widehat{\theta}}^{1} \theta f(\theta|a_H)d\theta + F(\widehat{\theta}|a_H)\widehat{\theta}\right)\frac{f(\widehat{\theta}|a_L)-f(\widehat{\theta}|a_H)}{B(\widehat{\theta})^2} + 2R(\widehat{\theta})\frac{\left(F(\widehat{\theta}|a_L)-F(\widehat{\theta}|a_H)\right)}{B(\widehat{\theta})}$.

Let $G \equiv -\left(\widehat{\theta}x_H + (1-\widehat{\theta})x_L\right) f(\widehat{\theta}|a_H) - vR(\widehat{\theta}) - v\frac{F(\widehat{\theta}|a_H)}{B(\widehat{\theta})}$, which is zero in the optimum.

Note that $G' = \frac{\partial G}{\partial \widehat{\theta}} = -(x_H - x_L)f(\widehat{\theta}|a_H) - (\widehat{\theta}x_H + (1-\widehat{\theta})x_L)f'(\widehat{\theta}|a_H) - vR'(\widehat{\theta}) - v\frac{f(\widehat{\theta}|a_H)}{B(\widehat{\theta})} - v\frac{F(\widehat{\theta}|a_H)}{B(\widehat{\theta})^2}\left(F(\widehat{\theta}|a_L) - F(\widehat{\theta}|a_H)\right)$, which must be negative to ensure an interior solution.

We have now

$$\frac{d\widehat{\theta}}{dv} = -\frac{\frac{\partial G}{\partial v}}{\frac{\partial G}{\partial \widehat{\theta}}} = -\frac{-R(\widehat{\theta}) - \frac{F(\widehat{\theta}|a_H)}{B(\widehat{\theta})}}{G'} < 0.$$

Recall that $\delta = \frac{v}{f(\widehat{\theta}|a_H)}\left(R(\widehat{\theta}) + \frac{F(\widehat{\theta}|a_H)}{B(\widehat{\theta})}\right)$.

Hence,

$$\begin{aligned}\frac{d\delta}{dv} &= \frac{1}{f(\widehat{\theta}|a_H)}\left(R(\widehat{\theta}) + \frac{F(\widehat{\theta}|a_H)}{B(\widehat{\theta})}\right) - v\frac{f'(\widehat{\theta}|a_H)}{f(\widehat{\theta}|a_H)^2}\left(R(\widehat{\theta}) + \frac{F(\widehat{\theta}|a_H)}{B(\widehat{\theta})}\right)\frac{d\widehat{\theta}}{dv} \\ &\quad + \frac{v}{f(\widehat{\theta}|a_H)}\left(R'(\widehat{\theta}) + \frac{f(\widehat{\theta}|a_H)}{B(\widehat{\theta})} + \frac{F(\widehat{\theta}|a_H)}{B(\widehat{\theta})^2}\left(F(\widehat{\theta}|a_L) - F(\widehat{\theta}|a_H)\right)\right)\frac{d\widehat{\theta}}{dv},\end{aligned}$$

which is positive (assuming that $f'(\widehat{\theta}|a_H)$ is not too negative).

Finally,

$$\frac{dw_H}{dv} = \frac{1}{B(\widehat{\theta})}\left(1 + \frac{v}{B(\widehat{\theta})}\left(F(\widehat{\theta}|a_L) - F(\widehat{\theta}|a_H)\right)\frac{d\widehat{\theta}}{dv}\right) > 0.$$

which is positive (assuming that $f(\widehat{\theta}|a_L) - f(\widehat{\theta}|a_H)$ is not too negative).

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